The motor mounts on top of the drive housing **7** mating with the housing lid and using the 4 bolt pattern of the motor mount to affix the motor and lid to the housing. The motor **11** and housing **7** are then secured to the valve body **1** by the 4 through bolts **20** and holding bars **4**. Two threaded spacers **12a** and **12b** may be substituted for the motor mounting bolts for mounting the optional encoder/position switch **18** and actuating mechanism **16**,**17**. In this case a coupling **14** is used to attach threaded encoder shaft **15**. This shaft drives the threaded bushing **16** in and attached cam **17** in the vertical direction corresponding with the position of the diaphragms as positioned by the motor and direct connection to the rotor at the other end of the motor drive shaft. The position may be adjusted so that when the diaphragms and integral throttling surface are closed down on the discharge island the switch will be closed. Alternately, the threaded shaft **15**, bushing **16**, and cam **17** maybe replaced with a potentiometer, or other suitable encoder.

CLAIMS

What is claimed is:

1. A free draining plastic throttling valve utilizing an integral diaphragm throttling surface, backed up with a secondary diaphragm for regulating the flow of various process fluids comprising.

(a) a plastic valve body having and inlet and outlet. The inlet extending into the housing and up to a throttling area mating with the primary diaphragm throttling surface.

(b) an outlet channel passing from the captive volume downstream of the throttling region and within the valve to the outlet port, arranged to free drain said captive volume.

(c) minimal captive volume to port volume ratio.

(d) a throttling surface consisting of a small and adjustable gap along a constant distance of considerable length creating a linear pressure drop with increasing flow velocity.

(e) a fluid passage way and internal cavity free of sharp corners, cracks, or crevasses.

(f) a valve assembly of wetted components of constant material type.

(g) a valve assembly of plastic where the required metallic components are isolated at safe distances of barrier plastic to minimize ionic migration from the process fluid to said metallic components.

(h) a weep hole included between the diaphragms such that if the fist diaphragm should fail process fluid can be discovered at the outlet of the weep hole before the secondary diaphragm fails with much more catastrophic consequences. Alternatively a detector maybe installed in the weep hole to detect presents of fluid in the inter diaphragm cavity.

2. A free draining plastic throttling valve of double diaphragm construction for the safe containment of hazardous and toxic process fluids comprising.

(a) the features enumerated in **claim1**.

(b) a weep hole and passage way to detect a break or leak of the primary diaphragm without the need for disassembling the valve.

3. An integral throttling surface and primary diaphragm comprising.

(a) tapered sides and a flat fluid discharge matching the contour of the body discharge area whose gap is controlled by the positioning of the diaphragm causing the fluid pressure drop to be a linear relationship to the flow through the gap.

(b) an integral threaded stem for capturing the backup diaphragm on the non wetted side of the primary diaphragm and including a weep hole between the diaphragms such that in the event of the failure of the primary diaphragm the process fluid may be discovered at the outlet of the weep hole before a catastrophic failure of both diaphragms releasing the process fluid into the internals of the motor and drive.